UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/669,197	09/24/2003	Carl J. Skeps	58695US002	2656

32692 7590 03/11/2005

3M INNOVATIVE PROPERTIES COMPANY
PO BOX 33427
ST. PAUL, MN 55133-3427

EXAMINER	
WALLING, MEAGAN S	

ART UNIT	PAPER NUMBER
2863	

DATE MAILED: 03/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/669,197	SKEPS ET AL.	
	Examiner	Art Unit	
	Meagan S. Walling	2863	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 December 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *13* is/are allowed.

6)☒ Claim(s) *1-12,14 and 15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *24 September 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *1/21/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1, 2, 5, 8, 14, and 15 are finally rejected under 35 U.S.C. 102(b) as being anticipated by Wolf (US 4,173,441).

Regarding claim 1, Wolf teaches imaging a sequential portion of the continuously moving web to provide digital information (column 1, lines 62-66), processing the digital information with at least one initial algorithm to identify regions on the web containing anomalies (column 2, lines 3-9), extracting identified regions from the digital information (column 2, lines 10-13), and analyzing the extracted identified regions with at least one subsequent algorithm to determine which anomalies represent actual defects in the moving web (column 2, lines 39-45).

Regarding claim 2, Wolf teaches storing or buffering the identified regions prior to analyzing (column 2, lines 52-55).

Regarding claim 5, Wolf teaches thresholding (column 2, lines 1-3).

Regarding claim 8, Wolf teaches that at least one subsequent algorithm characterizes at least a portion of the web into quality classifications (column 2, lines 5-6).

Regarding claim 14, Wolf teaches imaging a sequential portion of the web to provide digital information (column 1, lines 62-66), processing the digital information with at least one

initial algorithm to identify regions on the web containing anomalies (column 2, lines 3-9), extracting identified regions from the digital information (column 2, lines 10-13), and analyzing the extracted identified regions with at least one subsequent algorithm to determine which anomalies represent actual defects in the web (column 2, lines 39-45).

Regarding claim 15, Wolf teaches an imaging device for imaging a sequential portion of the continuously moving web to provide digital information (columns 1, lines 62-66), and computational equipment for processing the digital information with an initial algorithm to identify regions on the web containing anomalies (column 2, lines 3-9), then extracting identified regions from the digital information (column 2, lines 10-13), and then analyzing the extracted identified regions with at least one subsequent algorithm to determine which anomalies represent actual defects in the moving web (column 2, lines 39-45).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 4, 7, and 9-12 are finally rejected under 35 U.S.C. 103(a) as being unpatentable over Wolf in view of Eichel (US 6,266,437).

Wolf teaches all of the limitations of claims 4, 7, and 9-12 except the limitations that the initial algorithm comprises forming a blob list (current claim 4), that the continuously moving web has a pattern, and the initial algorithm used to process the digital information is capable of

distinguishing between regions of the web containing perfect pattern from regions of the web containing pattern and also possible defects (current claim 7), that the identified regions contain information, as indicated by size, having at least an order of magnitude less than the digital information (current claim 9), that the subsequent algorithm includes a plurality of steps, wherein each of the plurality of steps comprises comparing each anomaly against a combination threshold-pixel size criterion (current claim 10), that an anomaly is identified as an actual defect if any one of the criteria is satisfied (current claim 11), that at least some anomalies are reported in real time for process monitoring, process control, or both (current claim 12).

Regarding claim 4, Eichel et al. teaches forming a blob list (column 7, lines 30-34).

Regarding claim 7, Eichel et al. teaches that the continuously moving web has a pattern (column 2, lines 16-17), and wherein the initial algorithm uses to process the digital information is capable of distinguishing between regions of the web containing perfect pattern from regions of the web containing pattern and also possible defects (column 2, lines 33-38).

Regarding claim 9, Eichel et al. teaches that the identified regions contain information, as indicated by size, having at least an order of magnitude less than the digital information (column 6, lines 2-4).

Regarding claim 10, Eichel et al. teaches that the subsequent algorithm includes a plurality of steps, wherein each of the plurality of steps comprises comparing each anomaly against a combination threshold-pixel size criterion (column 7, lines 30-33 and column 8, lines 43-45).

Regarding claim 11, Eichel et al. teaches that an anomaly is identified as an actual defect if any one of the criteria is satisfied (column 9, lines 35-39).

Regarding claim 12, Eichel et al. teaches that at least some anomalies are reported in real time for process monitoring, process control, or both (column 2, line 38).

It would have been obvious to one skilled in the art at the time of the invention to combine the teachings of Wolf with the teachings of Eichel et al. to compare anomalies against threshold-pixel size criterion. The motivation for making this combination would be to accurately locate anomalies by using precise digital information.

3. Claim 3 is finally rejected under 35 U.S.C. 103(a) as being unpatentable over Wolf in view of Dalmia et al. (US 6,259,109).

Wolf. teaches all the limitations of claim 3 except the limitations that the stored or buffered information is analyzed after the imaging has been performed on the entire web (current claim 3).

Regarding claim 3, Dalmia et al. teaches storing the recorded image of the web and playing it back for analysis after recording is complete (see abstract).

It would have been obvious to one skilled in the art at the time of the invention to combine the teachings of Wolf with the teachings of Dalmia et al. to store the identified regions prior to analyzing. The motivation for making this combination would be to play back the stored image at a slower speed for easier inspection (Dalmia et al., column 1, lines 49-51).

4. Claim 6 is finally rejected under 35 U.S.C. 103(a) as being unpatentable over Wolf in view of Floeder et al. (US 2002/0110269).

Wolf. teaches all the limitations of claim 6 except the limitation that the continuously moving web is unpatterned.

Wolf teaches locating defects on unpatterned polymeric films (see paragraph 47, lines 1-4).

It would have been obvious to one skilled in the art at the time of the invention to combine the teachings of Eichel et al. with the teachings of Floeder et al. to find defects in unpatterned webs. The motivation for making this combination would be to find defects in all types of materials and to not limit defect detection to patterned webs.

Allowable Subject Matter

5. Claim 13 is allowed.

The following is an examiner's statement of reasons for allowance: Please see previous office action for reasons for allowance.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Response to Arguments

Regarding Wolf

In light of applicant's response and arguments, claim 1 as currently stated remains rejected under 35 U.S.C. 102(b) as being anticipated by Wolf (US 4,173,441). Wolf clearly teaches "extracting identified regions from the digital information" in column 2, lines 10-13, which states "selected multiple features of each generated scan signal are extracted by means of multiple discriminator circuits employing predetermined lane feature threshold levels." Wolf continues, explaining that the "multiple features" are determined when various signals are above or below a predetermined level, indicating that an anomaly exists. The completion of the defect classification, as taught in column 2, lines 39-45, is equivalent to analyzing the identified regions of digital information with a subsequent algorithm. Because claim 1 does not specifically point out or say what the "subsequent algorithm" entails, any subsequent analysis of the regions is construed as an algorithm.

Although Wolf indicates, in column 2, lines 66-68, that all steps must be completed in real time, claim 1 makes no mention to whether or not it is completed in real time, therefore this argument is moot.

The proposed amendment suggested during the November 3, 2004 interview was to more particularly point out that the "identified regions" in the extracting step are a subset of the "digital information" from the imaging step (see interview summary). It is the position of the examiner that the addition of this claim language would not unduly limit the scope of the claim, as stated by the applicant, but would more clearly define the claim as it is intended to be stated.

Regarding Wolf in view of Eichel

Applicant argues that claims 4, 7, and 9-12 are patentable over 35 USC 103(a) over Wolf in view of Eichel (US 6,266,437) because Eichel does not describe an inspection system that extracts identified features that may contain anomalies and then subjects those regions to at least one subsequent algorithm to determine if those regions truly contain defects. While this is true, no assertions to the contrary were made in the office action. Rather, it is stated that Wolf teaches these aspects, as described above, and Eichel teaches those elements missing from the Wolf patent as is clearly stated in the office action.

Regarding Wolf in view of Dalmia

Applicant argues that claim 3 is not patentable over 35 USC 103(a) over Wolf in view of Dalmia (US 6,259,109) because Dalmia fails to teach, suggest, or disclose the identification of anomalies, extraction of the identified regions containing anomalies, or the analysis of the extracted regions with at least one subsequent algorithm to determine which anomalies represent actual defects. While this is true, no assertions to the contrary were made in the office action. Rather, it is stated that Wolf teaches these aspects, as described above, and Dalmia teaches those elements missing from the Wolf patent as is clearly stated in the office action.

Regarding Wolf in view of Floeder

Applicant argues that claim 6 is not patentable over 35 USC 103(a) over Wolf in view of Floeder (US 2002/0110269) because Floeder does not describe the elements of extracting identified regions of digital information that may contain anomalies and then subjecting those

regions to at least one subsequent algorithm to determine if those regions truly contain defects. While this is true, no assertions to the contrary were made in the office action. Rather, it is stated that Wolf teaches these aspects, as described above, and Floeder teaches those elements missing from the Wolf patent as is clearly stated in the office action.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Meagan S. Walling whose telephone number is (571) 272-2283. The examiner can normally be reached on Monday through Friday 8:30 AM to 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on (571) 272-2269. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

msw

John Barlow
Supervisory Patent Examiner
Technology Center 2800